

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2005/000034

A. CLASSIFICATION OF SUBJECT MATTER

Int. CL ⁷: C07D 253/10, 401/12, A61K 31/53, A61P 35/00.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
STN Files Registry, CA: substructure search. Pubmed and Espac keyword search: benzotriazine.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	AU 2003265023 A (AUCKLAND UNISERVICES LIMITED et al) 8 April 2004. See especially claims 64 and 65.	2-36
X	CA 138:304247 & Tetrahedron Letters, 2002, vol. 43(52), pages 9569-9571, M. P. HAY et al, "New and versatile syntheses of 3-alkyl- and 3-aryl-1,2,4-benzotriazine 1,4-dioxides: preparation of the bioreductive cytotoxins SR 4895 and SR 4941." Registry number 71503-85-0.	2, 4-13, 15-24, 28-36
X	CA 129:339530 & Anti-cancer drug design, 1998, vol. 13(6), pages 575-592, A. B. KELSON et al, "1,2,4-benzotriazine 1,4-dioxides. An important class of hypoxic cytotoxins with antitumor activity." Registry numbers 71503-85-0, 166182-18-9, 215535-68-5, 215535-71-0.	2, 4-13, 15-24, 28-36

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
4 May 2005Date of mailing of the international search report
13 MAY 2005Name and mailing address of the ISA/AU
AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaustalia.gov.au
Facsimile No. (02) 6285 3929Authorized officer

FRANCES RODEN
Telephone No : (02) 6283 2239

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2005/000034

C (Continuation).

DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0649658 B1 (THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY) 14 June 2000. See especially compounds 18a and 31, and the claims.	2-36
X	US 2002/0103200 A1 (SANOFI-SYNTHELABO INC.) 1 August 2002. See general formula (I) and compound 18a in example 10.	2-36
X	WO 1997/011699 A1 (SANOFI WINTHROP INC.) 3 April 1997. See general formula (I).	2-36
X	WO 1989/008647 A1 (SRI INTERNATIONAL) 21 September 1989. See claim 1.	2-36
X	CA 138:130592 & Journal of Medicinal Chemistry, 2003, vol. 46(1), pages 169-182, M. P. HAY et al, "Structure-activity relationships of 1,2,4-benzotriazine 1,4-dioxides as hypoxia-selective analogues of tirapazamine." Registry number 50476-99-8.	2-24, 27-36
X	WO 1991/004028 A1 (SRI INTERNATIONAL) 4 April 1991. See especially general formula (II), example 10 and the claims.	2-36
X	DD 272591 A1 (AKADEMIE DER WISSENSCHAFTEN DER DDR) 18 October 1989. See especially example 5 in table 1 and general formula (I).	2, 13, 24
X	International Journal of Radiation Oncology Biol. Phys. 1992, vol. 22, no. 4, pages 701-705, A. I MINCHINTON et al, "Second-generation 1,2,4-benzotriazine 1,4-di-N-oxide bioreductive anti-tumor agents: Pharmacology and activity in vitro and in vivo." See especially compounds SR 4754 and 4755 in table 1.	2-36

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NZ2005/000034

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: **1-23 in part**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
These claims are very broad in their scope and rely on characteristics that can not be fully searched. The search was therefore limited to the compounds per se of claim 24.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/NZ2005/000034

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
AU	2003265023	WO	2004026846		
EP	0649658	AU	74117/94	CA	2132578
		EP	0972517	HU	71119
		NO	943524	NZ	264502
		SG	52568	SK	114894
		US	5670502	US	6121263
				CZ	9402326
				JP	7215882
				NZ	299690
				US	5484612
				US	6277835
US	2002103200	AU	34337/89	DK	223090
		ES	2013123	GB	2203151
		NZ	228323	PT	90039
		US	5616584	US	5624925
		US	6362184	US	6828321
		WO	1989/008647	EP	0413706
				NO	904003
				US	5175287
				US	5849738
				WO	1988/002366
WO	1997/011699	AU	68548/96	AU	69690/98
		CA	2232989	CA	2287257
		CZ	9800898	EP	0866709
		HU	9802536	NO	981324
		NZ	316340	US	5827850
		WO	1998/047512	BR	9808958
				CN	1202827
				EP	1044005
				NO	995109
				US	6153610
WO	1991/004028	EP	0478545	NO	920747
WO	1989/008647	AU	34337/89	DK	223090
		ES	2013123	GB	2203151
		NZ	228323	PT	90039
		US	5616584	US	5624925
		US	6362184	US	6828321
		WO	1988/002366	EP	0413706
				NO	904003
				US	5175287
				US	5849738
				US	2002103200
DD	272591				

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX